Huntsville Atari™ Users Group

Alabama In The

HEART OF DIXIE

And The beautiful Tennessee Valley

From The Top:

I would like to talk to all of the members about the support that the HAUG gives to the ATARI computer system line. The club supports two BBS, a monthly newsletter, the Public Library, both the 8-bit and 16-bit computer systems and the IEEE Computer Fair. The club has donated to the Public Library, a 130XE system for general public use. The newsletter goes not only to the HAUG members but to many exchange ATARI Clubs in the USA and a few out side the USA. We bought a full ST and hard disk system to use on the HAUG BBS. The controller card/assy and power supply for the Bloom County ST BBS was paid for by the HAUG. The phone bill for both of the BBSs are paid for by the HAUG also. The club has bought the full set of repair equipment for the 8-Bit Computer systems. The club can repair almost anything for the 8-bit computer system now. This is another service we offer to all the members of HAUG.

As you can see, the club has put in a lot of effort on the total ATARI line. In the near future we will need to start getting all of the repair and test equipment for the 16-bit (ST) line. This will give us (HAUG) the edge up on most of the other Users Groups around the states. We can keep the ATARI Computer in Huntsville alive and well. But to do this we will need to have more money. The Board of Directors would like for the Members to vote for a increase in the YEARLY DUES. The dues have been $12.00 for a long time. I have been a member for about four years and it looks like for us to continue doing all the things we now do, we will need more money. The Board would like to raise the DUES to $15.00 a year. The cost of doing business is going up. The postage is up from three years ago, the phone line charges are up, and printing of the newsletter is going up. As you can see everything is going or has gone up except the money coming in. It has stayed the same for the last three or four years.

The bottom line is YOU the members will need to give this some thought so we can talk and vote on this at the 15 October meeting. If you would like to see more of an increase we will talk about that also.

Hope to see all of you at the meeting this month. Look for a small write up on the High Tec Expression latest software Award Ware. It looks like some good stuff.

...Tom Brooks...Pres...

SOFTWARE BLACKOUT?
by Bill Powell

At the August H.A.U.G. meeting, I brought up the subject of Atari 8-bit availability - or more precisely - its non-availability. During the discussion, a comment was made by the news editor that Huntsville was a "Commodore town". And I can agree with that statement after searching through most of the stores around here looking for software. I'm also concerned because it seems that other cities are becoming just as void of new software for 8-bit machines. Cities like Madison, Montgomery, Mobile, Texarkana, Rock Island, Moline, Petersburg, Roanoke, Salt Lake City, and even Denver seem to suffer from the shortage. Are these cities also "just 'Commodore towns'"?

I don't know about you, but this writer has invested over $3000.00 in Atari equipment and software. I would hate to have to sell the whole bunch (and loose a bunch!) just so I could purchase a machine which has new and current state-of-the-art software available for it.

I subscribe to Family Computing magazine. I used to see review after review of 8-bit programs - for the Atari. Lately, they have very few of these reviews. Most software is listed for the IBM, Apple, or Commodore machines. Yes, FC still provides Atari 8-bit program listings - perhaps in expectant sympathy for us Atari owners who might soon join the ranks of the Adam's and the TI-99's.

Newer, faster, better 8-bit software continues to be developed - but not for Atari machines. Wouldn't it be so simple to place the Atari version on the flip

side of the IBM/Apple/Commodore disks?

The software problem is mentioned by individuals now and then in various computer magazine "letters to the editor" columns, yet I believe we can provide a stronger influence to software companies through official club correspondence. The club secretary tells me there are plenty of us still bootin' and printin' on these Atari's. You can help solve the software "blackout". Bring your convictions, desires, and a pencil to the next H.A.U.G. meeting. Portions of this letter, along with your supporting signatures, will be included in another letter to let a few publishers (software and magazine) know that a strong market continues to exist for Atari 8-bit software, especially here in Huntsville, Alabama.

FROM YOUR EDITOR

Leland Gardiner has come through with help for this issue of the newsletter. Bob Russell, Jim Collins and Bill Powell are also going to help. They are giving time to the club by typing in articles for the newsletter and helping with the BBS uploads. This is a big help to me and should help improve both the news letter and the HAUG BBS. This is the kind of help needed to really get the club rolling again. We now need somone to take on the task of listing the meetings in the local media. Setting up the list should take an hour or two. From then on it's just a matter of calling or sending post cards every month. Six or more local papers (company and regular) plus both cables and many radio and TV stations give free meeting notices to groups such as owers.

For other newsletters and new members. The HAUG newsletter is available about a week before the mailed copy by calling either the HAUG BBS (205) 461-7893 or Bloom County BBS (205) 772-7103. Some past issues are on line. Sys-Ops, could Fnet be used to exchange newsletters? I don't mean a complete newsletter, but normally only the part that is not copied from others and would be of interest to other clubs. This would be a BIG help to many of us newsletter editors as it could provide a quick way to do exchanges of new information and reviews, and provide better coverage to our members. It would also be a very useful function and

provide a REAL service for ALL club members and not just modem users.

Elections for club officers will be in December, which is only THREE meetings away, so be thinking about who you want to guide the club in 1988. How about YOU? Unless there is a date change, there will NOT be an ST-SIG meeting in either November or December. The December meeting will be a combined general and ST-SIG for the elections.

There are only FOUR meetings before the IEEE Faire. Again, it is NOT too early to develop demos or make plans to support the club and Atari at the Faire.

From the SLCC Journal - John P. Salva, a club member, had the following in part of an article: "My partner and I decided to turn the results of our fiddling into a marketable product, so we created Hayward Computer to produce our line of disk drives. We are currently offering a 360K 5.25" disk drive which has its own power supply and will plug right into the ST for $199. We also offer this unit in kit form for $175 ($150 for unit less power supply; this is intended for those who want to use their exiting Atari disk drive supply), and for those die-hard hackers, the cable alone and construction plans for $20. We are planning to introduce a line of 3.5" disk drives and a combination 3.5"/5.25" drive for those of you who haven't yet purchased a second drive and are trying to decide which type of drive to buy."

Hayward Computer
426 Smalley Ave #1
Hayward, CA 94541
(415)581-5516

From Michigan Atari Magazine, September 1987 - Toronto Atari Show - Jerry Cross: On August 15-16, Atari canada hosted a computer show in Toronto. .... Supra will soon release a new 2400 baud modem. Priced at only $189, it will feature 100% Hayes command set compatibility, built in phone number memory for 8 numbers, plus other features found on todays modems. .... Data Pacific was on hand to show their new interface that allows Atari-ST drives to format and write Mac disks. .... Practical Solutions showed an interface called VideoKey. This allows you to convert from RGB to composite, and is designed specifically for ST's without RF modulators. You can tape the graphics off the ST or view them on a composite

monitor. (Good for demos or for those not having a color monitor and wanting to play games. ED HAUG)

Atari's own financial picture has improved lately. In the latest quarter (2nd), its profits were $13.54 million, while revenue rose to $70.69 million. First quarter sales were $65.13 million with a net income of $15.25 million. This is $135.8+ million in first half sales and $28.8+ million income. At this rate, Christmas sales could push them to near $.5 billion by the end of 1987 as most computer companies are said to make 70% of their sales in the second half of the year. JT is three years into his five year goal of making Atari a $1 billion a year company. Now if he can do with Federated Stores what he did with Atari, he will really be bringing in the cash.

The ST-Transformer which emulates the 8-bit Atari 800 will be released to the Public Domain in ST-Log (from Analog).

Want software for your 8-bit Atari? Then write for a Computer Direct catalog. It lists Atari and Apple software. There is as much Atari as Apple listed in its 64 pages, with many, many listed for both machines. I never saw so much Atari software offered by one company.

COMPUTER DIRECT
A Division of PROTECTO
22292 N. Pepper Rd.
Barrington, IL 60010

One Apple owner at work says he has had very good service from them. They give a 15 day free trial period and have a 90 day replacement policy.

The ST can now have over 1600 colors on the screen at one time, or so the claims go. COLORBUST 3000! ($19.95) V 1.0 from BEERY'S BIT SOFTWARE, 8174 Century Circle East, Suite 8, Indianapolis, IN 46260. Has a palette of 3375 distinct colors. Import Degas and Neo pics. Has Colorburst slide show program.

Spectrum 512 is coming from Antic with 512 colors (up to 48 colors per scan line). Import Degas, Neo, IFF, HAM Amiga (4,096 colors converted to 512 colors).

GFA-Film from Michtron displays 1088 colors at one time in low res and 288 at one time in medium res. The ST looks like it is getting very close to the Hold and modify (4096 color) mode of the Amiga.

On the sound end, the ST can go 30 HZ to beyond audibility in three voices. The Amiga has four voices (stereo 2+2) limited to well under 10K Hz, or so I have read. The best sound depends on what YOU need or want. I for one, don't care one way or the other.

STWRITER V2.0 is now available. It's nice. I can't detect any real speed difference except in mass character delete using the delete key, and then the slow down is VERY small. It can be run just like the older versions or in a semi-GEM mode, and you can switch back and forth between the two. In GEM, you can use the mouse to position the cursor (real nice), you can load or merge a file using the GEM window to select the file (great), and you can use the pull-down menus (so-so). However, when in the edit mode you can't access GEM without using Esc to exit to the GEM menu screen. You can then "mouse off" to the old menu screen. In the edit mode, the screen looks and can work just like the non-GEM version. CAUTION! Take care in what you do as it is easy to delete a file when you don't want to. I deleted this one but had it 95% backed up. Did the same thing with the older STWRITER also. Just don't change disks or click on things to fast as you may be sorry. The delete and format options should be under a different drop down box. Although I think my problem was the loading speed given me by DISCACHE. I assumed I had not had a successful load and played with the boxes.

COMPUTAH - The Physics & Astronomy Dept. of Michigan State University as still using 8-bits in their computer labs. The Cyclotron Lab just discovered the ST, and are using several to replace Techtronics Terminals. They are saving big bucks and getting a local CPU too. FERMILAB, the country's largest partical accellorator, is also buying ST's now that MSU folks have taken the ST's with them on their many trips to FermiLab. Thanks to John Nasgy for that information.

COULD YOU USE A BATTERY BACK UP ?
By Dave Porter (Edited - ED HAUG)
New Orleans ATARI Users Group.

You may want to consider battery back up power for the same reason I built one for a friend of mine. His 2 year kid recently unplugged his computer with two

hours worth of composing and key strokes in memory. I once told my wife she could use the extension cord (that at the time had my computer plugged into it) and with out a thought let her unplug my computer with 13 pages of word processing document in memory, unsaved of course. For those reasons or if you happen to feel unexpected power failure is likely to ruin your important work before you save it, this may be for you.

This lets you use four nickel cadmium rechargeable batteries. These four batteries are rated at 1.2 volts per cell and therefore will give 4.8 volts when used in series. (End to end) Sure these batteries are more expensive but for less than the cost of a box of cheap no name disks you can do the whole thing and only once. Flashlight batteries will only work their life cycle and then need to be replaced. About $10 even at the most expensive retail prices should do this project. A lot less if you shop right.

Before you blindly do this, or before any of you more technical users question if I did my homework, let me say this only to give you some confidence in the idea. I am a degreed engineer and have attended schools on nickel cadmium batteries for both application and maintenance theory. And over the last 15 years I have developed several ni-cad (nickel cadmium) circuits for use in medical, marine, and field monitoring instruments for the oil production industry. In fact one typical benefit for using a ni-cad parallel system is it is one of the more reliable low voltage stabilizers available. That is, this circuit will provide excellent protection from small increases or decreases in supply voltage thus protecting your computer not just the data.

Use two crimp splice connectors. These are used in several automotive applications, everything from trailer light connections to the new cyclops stop light connections. All you need is two such connectors from RADIO SHACK or automotive parts house, a four cell battery holder, four nicad batteries, and a small length of flexible zip cord wire.

Take a small hobby type knife or thin knife blade and split the insulation along the grove of your ATARI power supply about six inches from the din

connector that actually plugs into the back of the computer. If you do this you will not have damaged the insulation in any way but rather separated each of the two main wires supplying the 5.0 volts dc to your computer. No wire skinning is necessary on the power supply if you use these crimp type wire splices. One side of the power supply cord is clearly marked with a white stripe. This stripe is the plus 5.0 volt connection and should with the crimp splice be connected to a short length of wire to the plus end of your batteries. If you do this correctly success is guaranteed. Just make the other connection to the opposite wire and opposite end of your batteries and you should be finished.

You may get by on the smaller double a size batteries but they will only power the typical XL/XE for about 23 minutes. More than enough time to save your data during short duration failures. (Remember your disk drive won't work either). If your failure is limited to some careless unplugging at the wall, this would be plenty of time to reclaim your system without loss of data. On the other hand, you could use some surplus batteries found in your unused grass clippers out in the garage, these sub C size batteries will provide complete computing power for up to one full hour or more. Additionally these batteries will not over charge and can be left connected permanently. Like your electric toothbrush, connected like this the batteries will receive a very small charging current both during and after computing and should be fully charged, ready and available at all times. Figure the charging current to be approx. 65 milliamps with your computer off and about 58 milliamps with it on. This amount of charging current should not put any noticeable strain on your power supply and falls right in accepted limits for what is called a "C 10" charging rate. That is ten percent of the rated batteries capacity. The slight variance in charging current is due to the small drop in output voltage when the computer is operational. I have used this setup for several weeks now and have enjoyed the confidence I have knowing my wife won't place my system in failure mode using the vacuum cleaner, and your two year old can pull on my wall cord without me having a heart attack.

DOM IS BACK!
By Jim Gross

Well, after a long dry spell, the Disk-of-the-Month is back! The Advanced Music System (AMS) by Lee Actor is perhaps the most popular music composer system ever written for the Atari. There are literally hundreds (maybe even thousands) of AMS songs available. Most club disk libraries and bulletin boards are full of them...except ours! So for this month, I had planned to pull together some of the best of the AMS music files and a public domain player. Several players are available. All of them do the job, but some run from Basic and some will not run on the XL/XE machines without the translator disk. The one I planned to put on this month's disk is a relatively short machine language file which runs on any 8-bit Atari without the need for a translator. As a bonus, it displays a "player piano" keyboard which indicates each note played. Each of the four Atari sound channels is displayed as a unique color on the keyboard as the music plays.

Well, as I said, I MEANT to produce a disk full of the best of the AMS files. However, as I searched through the available Atari music, I found a couple of other programs that I thought you might be interested in. One is a totally awesome demonstration of Pokey Power called the Rotburg synthesizer. It uses machine language control of the output waveform to simulate the sound of actual musical instruments and percussion. The Rotburg rendition of Ravel's Bolero will blow your mind!

Another neat music system which I just discovered is called the Advanced Music Processor (AMP). Not to be confused with AMS, the AMP system was written by Philip Price and has apparently been used to produce background music for commercial games. Only about 20 or so songs are known to be available for this system, and some are not in the public domain due to existing contract restrictions. AMP version 11.4 utilizes redefined character sets and fonts to display full screen lyrics and animation while the music plays. A very interesting demonstration of the power of this system was written for ANTIC magazine.

As you can see, my original idea of an AMS disk got a little out of hand. What to do? The Rotburg Synthesizer is by far the best of the lot when it comes to realistic sound, but the four or five songs contained in the program really put it more in the demo category. AMS is really old stuff, although we don't have a lot of material in our library (I hope to change all that). As for AMP, I'm not sure I can find enough AMP songs to fill a disk.

So, just exactly what is the October Disk-of-the-Month going to be? I haven't decided yet! Tune in next meeting and see! Whatever it turns out to be, if you like Atari music, you won't be disappointed.

ATARI BULLETINS

(9/17/87) The XEP80 80-column adapters are in the Atari warehouse in Sunnyvale and are available for immediate shipment to dealers. The XEP80 plugs into the 2nd joystick port of any Atari 8-bit computer. Any video monitor can plug into the XEP80 and deliver true 80-column text. An extra port on the XEP80 allows standard parallel printers (ST or IBM compatible) to plug directly into the 8-bit Atari computers. The driver program for the XEP80 lets it take the place of the E: device. Software that is compatible with the E: device (such as Atari BASIC) will work in 80 columns without modification. Other software that writes directly to the screen (bypassing the OS) would need modification before working in 80 columns. Atari is working on AtariWriter 80 and Silent Butler 80 to support the XEP80. Delivery dates on these products are not yet set. The XEP80 retails for $79.95. The new XE Game System has also arrived in Sunnyvale and is on its way to toy stores and other retailers in the USA. The XE Game System retails for $149.95. It comes with a sophisticated keyboard, a light gun, and three top games including Flight Simulator II, Missile Command, and Bug Hunt.

(9/11/87) The Atari SX212 modem is currently shipping to Atari dealers in the USA. The first shipment arrived at the Sunnyvale warehouse during this past week. The SX212 is a Hayes-compatible modem which operates at 1200 baud (and also at 0-300 baud). Its Hayes-compatibility extends to the S-registers. The SX212 modem includes

both the standard RS232 port and the Atari 8-bit SIO port. However, 8-bit users should be aware that the software to support this modem through the SIO is not yet released -- in the meantime, the modem can still be used through an 850 or equivalent interface. The modem package includes a power supply (identical to the 2600's), a detailed manual, and special offers from the GEnie (General Electric) and BIX (Byte Magazine) online services. To connect the SX212 to an ST or to any other RS232-equipped computer, a full RS232 cable is needed -- a 3-wire cable does not work with smart modems. When the software is ready, Atari will market an add-on package for 8-bit users. This will contain an SIO cable and a disk which includes the modem driver and the SX Express terminal program by Keith Ledbetter. The suggested list price of the SX212 modem is $99.95.

ZMAGAZINE Atari News and Information
Issue #62 July 17, 1987
HOW TO USE ARC for 8-bit Atari
ANTIC PUBLISHING, COPYRIGHT 1987

An ARC (pronounced "Ark") file contains one or more files which have been compressed into a single file. Use ARCX.COM to extract the files from the .ARC file. ARCX is a machine-language program which requires at least 48K.

ARCX.COM may be downloaded from the Utilities section of the Atari 8-bit SIG (type GO ATARI8).

HOW TO USE ARCX.COM

Before running ARCX be sure you have removed all cartridges and BASIC is off. Now load ARCX.COM from DOS (use DOS menu choice "L"), or type ARCX if you are using Sparta or an OSS DOS.

ARCX will ask you for the name of the ARC file to extract files from. (If you don't remember the filename, you can get a directory by pressing the [+] key.)

After typing-in the name of the ARC file, ARCX will ask you for the drive to send the extracted files to. ARCX will extract all files from the ARC file and write them to the destination drive.

Next, ARCX will ask you if you want the screen turned off. If you press 'Y', then the screen will be turned off during the extraction process. This will speed up the process about 10%-20%.

ABOUT ARC

The expansion algorithms used to extract ARC files are quite complex, and therefore rather slow. (About one minute for each 5K of source file.)

ARCX uses all available memory and buffers the input and output so your disk drives won't be running all the time.

Keep in mind that the extracted files can be more then twice the size of the original ARC file. Be sure you have enough room before you start!

ARC was originally written in C by Tom Henderson of System Enhancement Associates. The source code was placed in the public domain allowing for ARC and ARCX to be ported to a wide variety of computers. For complete instructions, refer to the documentation files in the Utilities library of the Atari 8-Bit SIG.

ZMAGAZINE 69 September 4, 1987
ATARI'S TRAMIEL READY FOR BATTLE
Quoting Gen. George Patton and sounding a lot like a coach psyching up for the big game, Jack Tramiel says his Atari Corp. is ready to become America's consumer electronics supplier.

Speaking with business writer Bob Webster of United Press International, the 59-year-old Tramiel says, "One of the people I admire is Gen. George Patton. In business, whatever we do we go out there to win, not to play the sport. We have the best product, the best personnel and the best locations to make sure we win."

Atari has made headlines last week with its plans to buy out the 67-store Federated Group retail electronics store.

Tramiel tells Webster that the chain will be a key to his dream of turning Atari into a "vertically integrated" consumer electronics company.

"There are no companies of that nature left in the United States," Tramiel said. "General Electric was the last one. We are going to be an international consumer electronics company ....Computers are one of the products. Hitachi and Panasonic do not only make computers. I want to share my (research and development) costs, from designing and planning a product from the component to the shelf. This is the way my competitors in Japan have done it for a number of years."

Of course, Tramiel is not talking a great deal about future products, but he

did tell UPI he now plans to oversee Atari's development of a CD-ROM product to be introduced this fall. He also said Atari is negotiating with several semiconductor companies for a possible acquisition.

Of the Federated acquisition, Tramiel says the company hopes the chain will strengthen its sagging distribution. "Instead of waiting for three or four months to get a reaction from retailers, by having an outlet I can tell in six days," Tramiel said.

Webster comments that "most previous ventures by computer companies into distribution have failed, except for Tandy Corp.'s efforts through its Radio Shack outlets. But distribution alone does not appear to underscore Tramiel's pursuit of Federated."

That's the view of Jan Lewis, president of Lewis Research Group of Sunnyvale, Calif., who told the wire service, "On the most simplistic level, (Tramiel) wants to buy distribution. But I think his plans may be broader than that. Tramiel comes from retailing and I think he may see farther than others in the marriage of computers and consumer electronic products." --Charles Bowen

DBASIC - #3 Upgrade
By Levin Soule'

The last disk update, number three, to DBASIC was received on 4 September. I will not be at the next ST-SIG. Therefore, mail me a disk folded in a SASE and I will mail it back. It comes to me in a common envelope, inside two sheets of folded paper, without any problems. It now does what the manual says. They are now going to look at sound chip and RS-232 support. Future upgrades will be from their BBS, (505) 989-9578. They will also publish an electronic newsletter (NEWSLET1) about Oct 1, and post demos, updates, patches to the 27 Aug (latest) DBASIC, and utility programs. (No uploads to their board.)

TURBO BASIC COMPILER PROBLEM
By Jeff Colehour & Dick Hearsey
Edited for M.A.C.E. by Doug Miller.
The new TURBO BASIC system has been discussed in many publications and is truly an outstanding basic for the 8-bit ATARI. It is not only much faster than ATARI basic, but it also has a compiler

that provides an additional increase in speed for most applications. A few limitations on the types of basic commands that can be used with the compiler have been presented, but we have found another limitation that might be of interest to any one who is considering using the TURBO BASIC COMPILER. The problem has to do with arithmetic operations on singly or double subscripted variables. The short program shown below works correctly when using the TURBO BASIC INTERPRETER only, but gives an error when run in the compiled mode. This is followed by a simple work around that does work in the compiled mode.

```
10 REM TURBO BASIC COMPILER
20 REM SUBSCRIPT PROBLEM DEMO
30 DIM MAT(3)
40 MAT(1)=1
50 MAT(2)=2
60 MAT(3)=MAT(1)*MAT(2)
70 ? MAT(3)
80 END
```

The result of running this in the compiled mode is error 9 in line 0060:array or string dim error. A fix for this is to change line 60 and add line 65 as shown below:

```
60 Z=MAT(1)*MAT(2)
65 MAT(3)=Z
```

The limitation is apparently that if arithmetic operations on subscripted variables were performed on one side of the operator "=", a subscripted variable cannot appear on the other side. The arithmetic operation is part of the problem because a statement such as MAT(2)=MAT(1) does not cause an error. We have also encountered similar situations in which no error message was given, but incorrect results were obtained when running in the compiled mode. If subscripted variables are being used it would be advisable to carefully compare results obtained from the compiled and interpreted modes. This is not a serious limitation, since the work around is fairly easy, but it could require code modifications to permit use of the TURBO BASIC COMPILER.

TRADE/SELL

OKIMATE 20 with ST Plug & Print, cables. Will trade for dot matrix - NLQ or LQ printer & cables. Must be capable of B&W graphics. Kirk Paradise, 534-7290.

CLUB OFFICERS

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President--------Tom Brooks-------882-9165
1st VP-(XL/XE)----Lee Stanford-----883-7602
2nd VP (ST)-------Lamarr Kelley----852-9596
Secretary--------Bill Batchelor---837-4018
Treasurer--------J. J. Moniz------883-7118
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Board Member------Alan Winn--------837-9411
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Standing Committee Chairman

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Librarin---------Jim Gross--------883-0185
Editor-----------Levin Soule'-----534-1815
Bullentin Board---Charlie Mueller--772-7103
Technical--------Gary Hitchcock---883-7560
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Club Supported and Affiliated BBSs

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"HAUG" Official Club BBS-----300/1200 baud.
SysOp-Charlie Mueller---24hrs.-----461-STXE
"Bloom County ST"-------300/1200/2400 baud.
SysOp-Penguin Opus------24hrs.-----772-8526
"WRB"----------------------300/1200 baud.
SysOp-Bill Batchelor----24hrs.-----837-2025
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Huntsville Atari Users Group
3911 W. Crestview, S.W
Huntsville, AL 35816-3607

N E X T   G E N E R A L
    M E E T I N G
      7:00 P.M.
Thursday, October 15

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SU MO TU WE TH FR SA
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11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
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        AT
   UNIVERSAL DATA
     SYSTEMS

  520ST/1040ST SIG
      7:00 P.M.

Thursday, October 22
          AT
ABAX DATA SYSTEMS

(Record 128) Thru Dec 1987
(E)SLCC Newsletter Exchange
P.O. Box 1506
San Leandro, CA 94577